

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of:) Art Unit:	2879
Furong Zhu et al.)	
Serial No.: 10/583,236) Examiner:	Anne M/ Hines
Filed: March 6, 2007)	
For: FLEXIBLE ELECTROLUMINESCENT DEVICES) Confirmation No.:	8256
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)	

San Diego, California
March 30, 2010

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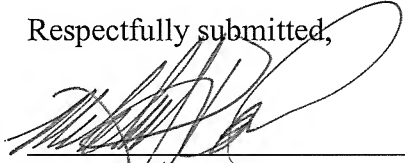
RESPONSE TO BOARD COMMUNICATION

Sir:

This is in response to the Communication dated March 1, 2010, the time for response to which ends April 1, 2010. As requested therein a replacement Appendix A is submitted herewith.

Respectfully submitted,

Date: March 30, 2010



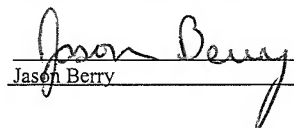
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Jason Berry

APPENDIX A

1. (Previously Presented) A flexible organic light emitting device comprising:
a flexible substrate,
a lower electrode layer on said flexible substrate,
an upper electrode layer that is at least semi-transparent,
an organic region between said lower electrode layer and said upper electrode layer, in which electroluminescence can take place when a voltage is applied between said lower electrode layer and said upper electrode layer,

wherein said flexible substrate comprises a metal layer and an upper substrate layer comprising a material selected from the group consisting of a plastic layer, a polymer layer and a dielectric layer, wherein the lower electrode is formed on the upper substrate layer; and

further wherein said metal layer and said upper substrate layer are disposed such that light generated as a result of said electroluminescence directed towards said metal layer through said upper substrate layer is reflected back to said at least semi-transparent upper electrode layer for enhancing light output from the flexible organic light emitting device.

2. (Previously Presented) The flexible organic light emitting device of claim 1, wherein at least one of said upper and lower electrodes has an interfacial modified surface for enhancing charge carrier injection.

3. (Previously Presented) The flexible organic light emitting device of claim 2, wherein said interfacial modified surface is formed by modifying said at least one of the upper or lower electrodes comprises a metal electrode, and said metal electrode is modified using inorganic or organic materials or a transparent conductive oxide (TCO).

4. (Previously Presented) The flexible organic light emitting device of claim 1, wherein said metal layer is comprised of an aluminum layer, and the upper surface layer is comprised of a plastic layer, wherein the plastic layer is laminated to or coated with the aluminum layer, and the plastic layer is positioned between the lower electrode layer and the aluminum layer.

5. (Previously Presented) The flexible organic light emitting device of claim 1, wherein said metal layer is comprised of a steel foil.

6. (Previously Presented) The flexible organic light emitting device of claim 1 wherein said upper substrate layer further functions as an electrical isolation layer between said metal layer and said lower electrode layer.

7. (Previously Presented) The flexible organic light emitting device of claim 6, wherein said upper substrate layer is a spin-coated polymeric layer or a dielectric layer.

8. (Previously Presented) The flexible organic light emitting device of claim 5, wherein the upper substrate layer further functions as an isolation layer between said steel foil and said lower electrode layer.

9. (Original) The flexible organic light emitting device of claim 1, wherein said upper electrode layer is transparent.

10. (Original) The flexible organic light emitting device of claim 1, wherein said upper electrode layer is a semitransparent or transparent anode.

11. (Original) The flexible organic light emitting device of claim 1, wherein said upper electrode layer is a semitransparent or transparent cathode.

12. (Original) The flexible organic light emitting device of claim 1, wherein said upper electrode layer is a multilayer structure comprising at least one semitransparent or transparent conductive film.

13. (Previously Presented) The flexible organic light emitting device of claim 12, wherein said multilayer structure comprises an index-matching layer of a material having a refractive index chosen such that said light output is further enhanced, and a charge carrier injection layer.

14. (Previously Presented) The flexible organic light emitting device of claim 13, wherein said index-matching layer comprises an organic material having a refractive index effective for enhancing light output.

15. (Previously Presented) The flexible organic light emitting device of claim 13, wherein said index-matching layer comprises an inorganic material having a refractive index effective for enhancing light output.

16. (Previously Presented) The flexible organic light emitting device of claim 13, wherein said multilayer structure is an anode and said charge carrier injection layer is a hole injection layer.

17. (Previously Presented) The flexible organic light emitting device of claim 16, wherein said hole injection layer comprises a high work function metal or a transparent conductive oxide (TCO).

18. (Previously Presented) The flexible organic light emitting device of claim 17, wherein said high work function metal is gold or silver.

19. (Previously Presented) The flexible organic light emitting device of claim 17, wherein said TCO is metal oxide selected from the group consisting of indium-tin-oxide (ITO), zinc-indium-oxide, aluminum-doped zinc oxide, Ga-In-Sn-O, SnO₂, Zn-In-Sn-O, and Ga-In-O.

20. (Canceled)

21. (Previously Presented) The flexible organic light emitting device of claim 16, wherein said hole injection layer comprises an organic material effective for hole injection or an inorganic material effective for hole injection, or a combination of inorganic and organic materials that are effective for hole injection.

22. (Canceled)

23. (Previously Presented) The flexible organic light emitting device of claim 13, wherein said multilayer structure is a cathode and said charge carrier injection layer is an electron injection layer.

24. (Previously Presented) The flexible organic light emitting device of claim 23, wherein said electron injection layer comprises a low work function metal.

25. (Previously Presented) The flexible organic light emitting device of claim 24, wherein said low work function metal is a rare earth metal and said index-matching layer comprises tris-(8-hydroxyquinoline) aluminum (Alq3) or N,N'-di(naphthalene-1-yl)-N,N'-diphenylbenzidine (NPB).

26. (Canceled)

27. (Previously Presented) The flexible organic light emitting device of claim 23, wherein said cathode comprises a silver layer and said electron injection layer is comprised of a calcium sub-layer over a lithium fluoride sub-layer, the silver layer being formed over the calcium layer.

28. (Previously Presented) The flexible organic light emitting device of claim 1, wherein said organic region comprises a hole transporting layer and an emissive layer and/or an electron transporting layer.

29. (Canceled)

30. (Previously Presented) The flexible organic light emitting device of claim 1, wherein said organic region comprises (i) a hole transporting layer, (ii) an emissive layer, and (iii) an electron transporting layer.